AMENDMENTS TO CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method encrypting characters from a data element in a database, the method comprising:

reading information identifying a data type associated with data in a particular column of the database from a location in the database, the location being outside the particular column;

reading a data element from the particular column, the data element including a first character string;

forming a restricting character set on the basis of the data type; ~~and~~

encrypting the first character string into a second character string, each character in the second character string being selected from the restricting character set; and

storing the second character string at the particular column of the first character string in the database.

2. (Original) A method according to claim 1, comprising the further step of:

arranging one or more character sets in a pattern for a data type.

3. (Previously Presented) A method according to claim 1, wherein the number of characters in the second character string is equal to the number of characters in the first character string.

4. (Previously Presented) A method according to claim 1, comprising the further steps of:

converting each character of said first character string to an index value; and adding a varying value to each index value before encryption.

5. (Previously Presented) A method according to claim 4, wherein the varying value is obtained by the steps of:

creating an initial value by hashing an encryption key;

adding adjacent index values pairwise from the left to the right using said initial value when adding the leftmost character.

6. (Original) A method according to claim 1, wherein the encryption is performed using the DES algorithm in stream cipher mode.

7. (Currently Amended) A system for encrypting characters from a data element in a relational database, the system comprising:

means for reading information identifying a data type associated with data in a particular column of the database from a location in the database, the location being outside the particular column;

reading means for reading a data element from the particular column, the data element including a first character string;

interpretation means for forming a restricting character set on the basis of the data type ; ~~and~~

encryption means for encrypting said first character string into a second character string, each character in the second character string being selected from the restricting character set; and

a database for storing the second character string at the particular column of the first character string in the database.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Currently Amended) A method for storing encrypted data in a database structured for the storage of un-encrypted data, said method comprising the steps of:

reading information identifying a data type associated with a data element in a particular column of the database from a location in the database, the location being outside the particular column and said data element including a first character string;

~~determining a data type of a data element including data to be stored in the database;~~

forming a restricting character set on the basis of the data type;

encrypting ~~the data element to produce an encrypted data element~~ the first character string into a second character string, each character in the second character string being selected from the restricting character set;

wherein said encrypting includes controlling the encrypting process so that the ciphertext corresponding to the encrypted data element satisfies restrictions provided in the database for storage of data for the determined data type; and

storing ~~the encrypted data in the database~~the second character string at the particular column of the first character string in the database.

13. (Currently Amended) The method of claim 12, ~~wherein said determining includes reading information identifying a data type associated with data to be stored in a particular column of the database from a location in the data base, the location being outside the particular column;~~ wherein said controlling includes controlling the encrypting process based on the information identifying a data type associated with data to be stored in a particular column of the database from the location being outside the particular column; and wherein said storing includes storing the encrypted data in the particular column.

14. (Cancelled)

15. (Cancelled)